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ABSTRACT

This presentation is intended to familiarize the audience with the Planning Programming Budgeting System (PPBS) in its entirety. Some illustrative examples of the system's outputs are demonstrated to convey their utility for highest level program and resource decisions. PPBS was originated by the Department of Defense to cover all of the activities and resource applications of all the armed services. In 1965, PPBS was adopted in the civil sector of the Federal Government. Since 1965, interest in and adoption of PPBS has spread beyond the Federal Government and now also includes the library community. It is hoped this presentation will: (1) increase the effectiveness of the work of the library community, (2) help define precisely what role the library should play within the existing plethora of information centers, (3) help librarians visualize the potential utility of PPBS to enable libraries to participate more effectively in decisions affecting their contributions to their establishments and (4) encourage librarians to explore PPBS further and take steps toward PPBS training, development, and application as appropriate in their respective environments. (NH)

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The Importance of PPB to Libraries

by

Willard Fazar
Executive Office of the President
Bureau of the Budget

Paper presented at an Institute on Program Planning and Budgeting Systems for Libraries at Wayne State University, Detroit, Michigan, Department of Library Science, Spring 1968

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Introduction

by
Genevieve Casey
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The following paper was presented at an institute on Program Planning and Budgeting Systems for Libraries, held at Wayne State University under the Higher Education Act, Title IIB, in the spring of 1968.

The intent of the institute was to introduce administrators and finance officers of large libraries, public, state, and academic to the principles and procedures of PPBS.

Each participant in the institute brought with him the most recent budget document from his own library, and with the help of the institute staff, attempted to convert it into a PPBS presentation.

The Importance of PPB to Libraries

by
Willard Fazar
Executive Office of the President
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Today I shall discuss a system for more realistic and beneficial program planning and budgeting by libraries. It is a means for libraries to enter the institutional decision-making process in the establishments where they are frequently buried as a good think with little or no role in decisions made by those establishments for executive program actions and resource allocations. Most usually the library enjoys acceptance and suffers from treatment as one of many administrative services or overhead functions of an establishment. I believe my conclusion applies to the traditional library practices of all sectors, including the Federal libraries, the academic libraries, the State and local public libraries, and the libraries of business and commerce.

Is there any form of self-help that libraries might undertake to participate more effectively in decisions affecting their existing and potential contributions to their establishments? Yes, in most cases. Their application of the Planning-Programming-Budgeting System (PPBS) offers tremendous opportunity for this type of advancement.

This presentation is intended to familiarize you with the PPB system in its entirety. Some illustrative examples of the system's outputs will be demonstrated to convey their utility for highest level program and resource decisions. I hope you will try to translate the language and the methods that follow into the context of your own library environments.

What is PPBS?

PPBS is many things for modernizing management and decision-making at all levels. It is a mechanism for making hard choices; a means for deciding among competing claims for always limited resources; a system for establishing priorities, setting policies, and for describing, numerically, difficult problems and the impact of alternate decisions for their solution.

PPBS is an integrated system to improve the information base for policy, program and resource-allocation decisions. It is a unifying and comparing process for higher level review and analysis of program alternatives. It provides, through narrative and numerical expression, an explicit determination of the relative efficiency and economy of allocating limited resources to alternate plans for achieveing concrete objectives. It is a means for revealing the long-range consequences (in terms of estimated costs and benefits) of annual or short-range decisions and actions on plans, programs, and resource allocations. It provides the basis for effective evaluation and integrated control of ongoing programs.

The Background

PPBS was originated by the Department of Defense to cover all of the activities and resource applications of all the armed services. By 1964, this system had proven its capacity to provide the Secretary of Defense with the explicit information required to formulate his judgment before making big and crucial decisions for the allocation of resources approximating half of the Federal budget. His decisions could then be substantiated by the PPB systems information documented before his decision-making.

In August 1965, the President directed his Cabinet and agency heads to

adopt PPBS in the civil sector of the Federal Government, based on guidance from the U.S. Bureau of the Budget.

Soon thereafter the Bureau of the Budget issued a bulletin containing instructions for implementation of the system. This bulletin along with subsequent modifications, continues to require the following materials from major Federal agencies in the executive branch:

1. A program structure that classifies all of an agency's activities, hierarchially, into program categories, subcategories and elements.

2. Program Memoranda (PM's). The PM is a document, oriented toward major program issues, that presents for all or part of a program category a comparison of the cost and effectiveness of alternatives for resolving those issues, the agency head's recommendation on programs to be carried out, and the reasons for those decisions.

3. Special Analytical Studies (SAS's) that provide the analytical ground-work supporting the budget-request decisions reflected in the PM's for both the budget year and for subsequent years.

4. Program and Financial Plans (PFP's). A multi-year summary tabulation of agency programs in terms of their outputs, costs, and funding requirements for the budget year and at least four subsequent years.

Since 1965 interest in and adoption of PPBS has spread well beyond the Federal Government. For example:

- U. S. States, counties, cities, and localities are studying and developing its application for programs under their jurisdictions, e.g., New York, California, Michigan, many counties, Detroit, Denver, New Haven, Pittsburgh.

- Nations around the world are developing its application for more effective government management and to accelerate

national development under the limited resources available, e.g., Canada, Chile, Sweden, Israel, Belgium, and many others.

-In the fall of 1965, the UN General Assembly endorsed the adoption of Program Budgeting by individual UN agencies, based on assistance provided the Expert Committee of 14 by the U.S. Bureau of the Budget.

-Some universities are undertaking its application for improved institution-wide management and decision-making.

-Even some industrial firms are exploring its utility, especially in the field of utilities.

The Methods.

Once the program structure is established and concrete objectives are identified, the merit of decisions for action and for the allocation of resources hinges on the extent and validity of an organization's analytical effort. This effort involves the systems analysis, operations research, and application of pertinent economic, statistical, and mathematical techniques appropriate for diagnosing interrelationships of variables and for quantifying estimates of costs, effectiveness, performance, uncertainty, etc. Continuous analytical effort must be applied throughout the PPBS activity to support decision-making and changes that may become necessary at any point in time. The budget that results is the financial expression of the program plans.

Systems analysis is the key to PPBS pay-offs, including the derivation of the successive approximations of the cost-effectiveness of program plans to achieve specified results. Systems analysis is an orderly method for evaluating all of the major factors bearing on the achievement of specific ends by alternate means. Systems analysis is the mechanism for treating the total problem under consideration instead of only parts and

pieces of the problem -- a practice too often employed with the excuse that parts of a problem are easier to understand and handle. But time and again operations research has proven that suboptimization of all the parts will not produce, in combination, the optimum system or solution to a complex problem. Systems analysis has five principal elements which, in effect, constitute the ingredients of PPBS analysis:

1. Objectives. The objectives of program plans must be identified concretely. To say that the objective is to "improve" something or to perform "better" may sound nice, but it is soft and intangible instead of concrete. Every program plan should have an objective or objectives, including benchmarks to achieve them, that are worded or identified so that whenever the question is asked, "Has it been done?", the answer must be "Yes" or "No" -- not "We're doing it" or "We're always doing it." In addition, such objectives should be time-phased, with the understanding that they and their "schedules" for achievement are always subject to change as unpredictable circumstances, at the time of their approval, may occur.

2. Alternatives. The choices for decision are represented by the specification and comparative analysis of alternatives. The need to identify and analyze alternatives stems from recognition that the decision-maker is entitled to a better basis for his formulation of judgment -- something more than the usual approach that presents him with a single program plan requiring "X" amount of resources along with the implication "It's the best. Take it or leave it." Systems analysis should be applied to several feasible alternatives, including alternate courses of action to achieve a given objective, but not excluding courses of action to achieve

alternate objectives.

3. Costs / resources. Explicit estimates of the resources required to carry out the several alternate program plans, are essential for the diagnosis. The estimates must be made not only for the budget year but for all of the subsequent years through the time of completion of the objectives. The estimates should cover both dollar costs and the physical resources to be procured for those dollars, e.g., manpower, facilities, materials, etc.

4. Models. A model is often helpful to illustrate and simulate a complex problem and the means for solution, without going through the actual experience and investment of resources. A wide variety of models ~~can be~~ are useful for this purpose. They range from a simple drawing, such as a road map or flow chart, to complicated mathematical models. The numerical depiction of the mathematical model, e.g., a linear programming model, can be especially helpful as one form of quantification in the systems analysis for PPBS.

5. Criteria. "Criteria" can be defined, simply, as "tests of preference." Sound criteria must be developed and stated explicitly as the bases for assessing the effectiveness, benefits, or utility of achieving the objectives of program plans. Since a principal purpose of PPBS is to estimate the cost-effectiveness or cost-benefits of alternate program decisions, the development of an effectiveness or benefit scale should be based on the numerical expression of criteria satisfaction (often called "performance") at different cost levels. This is illustrated, without entry numbers, in the final two charts of this paper. Unlike business and industry where a single criterion, profit, can usually be

used to measure effectiveness, the effectiveness of most governmental, academic, and library activities and programs depends on more complex and less tangible criteria.

The methods used for PPBS analysis may be described through a variety of closely intertwined and overlapping terms, including systems analysis, applied economics, operations research, management science, econometrics, quantitative reasoning, statistical methods, input-output analysis, and more. All of these terms involve the use of scientific method, numerical expression, logic, rigor, and explicitness. A large number of analytical procedures and specific techniques are available to conduct the systems analysis. Together, they comprise a huge workshop of tools or techniques. They present the skilled analyst with the problem of knowing what is in the workshop inventory, and of choosing the right tool(s) for the job to be done. Care must be taken to avoid the application of a very fine tool or technique to the wrong job or problem.

Let us take a quick-brush tour through the workshop to look at some of the tools or techniques available and at some types of products useful for the decision-maker who may never go through the workshop and who is not skilled in applying the tools.

Many of the tools or techniques for PPBS analysis can be grouped under applied economics and quantitative reasoning as follows:

Applied Economics

Economics is sometimes described as the science of how we choose to make the best use of scarce or limited resources, physical and dollar resources, to produce the goods and services required for mankind. Since the overall mission

of the Federal Government is to serve the Amierican people by employing its limited resources to provide the goods and services they require for effective Government, some of the economic principles, concepts, and laws are particularly relevant to the development and operation of PPBS.

The notations and illustrations that follow are grossly simplified in order to provide just a little exposure to the subject for those who are not well acquainted with applied economics techniques. Their utility for library program decisions rests merely in the transference of the terms used into those that reflect the library environment, activities, and services.

Applied economics for optimizing choices can proceed in two ways: through economy, to achieve a given result or output for least resources; or through efficiency, to get the greatest benefit or output for a fixed amount of resources.

1. The law of diminishing returns concludes that, generally, increases in some inputs or resources relative to other fixed inputs or resources will increase the total output less than proportionately to the increase in inputs, so that additional output derived from a given addition of input diminishes. This law is basic to answer a vital PPBS question: "Will the increment of funds requested for this program, provide an increment of output commensurate with the cost?"

2. Marginal reasoning, which requires incremental analysis, is a PPBS requisite to determine and compare the worth of additional increments of inputs for the achievement of a fixed output and of alternative outputs or program objectives. Sound incremental analysis involves comparisons of increments of cost with increments of benefit to estimate and display the significance and

interrelationship of increments of cost and of output such as, utility, products, returns, or benefits. Where the net increment of a move is positive, it is likely that a further move in that direction will yield a further net benefit. When an optimum has been reached, no incremental move, up or down, will yield any improvement. This is the position sought through marginal reasoning.

Utility is the capacity of a good, a product, a service, or an output to satisfy a human want. The economic law of diminishing marginal utility is applicable here since additional units of a given good most usually give less satisfaction or utility than units previously available. By comparing utility in our minds, we cannot construct a hypothetical scale with numerical values to demonstrate the relative utility of different quantities of a good. Since the validity of numbers representing the satisfaction derived may be highly questionable, effort should be exerted to develop numbers that approximate relative utility in the decision-maker's mind.

3. The marginal product is the extra output derived by adding an additional unit of a given productive factor with no change in the input of other productive factors. Here again, the extra units of the one factor may increase total output with diminishing marginal returns or output to the point where an additional unit of the given factor will not yield sufficient output to pay for the input cost, and if units of the factor continue to be added, the marginal unit added will yield no additional returns or product for the resources invested. Marginal product measurements can be quantified more reliably and objectively than those for marginal utility.

4. Marginal costs may furnish useful information not previously available for the decision-maker. Practices employed to provide decision-makers with

cost information for different levels of output or number of products are ordinarily confined tofigures representing total costs and average costs. But the important distinction between average costs and marginal costs is not always revealed. It is unfortunate that many managers take such pride in reducing the average cost per unit of output that, if they do not know the marginal costs of incremental units of output leading to lower average costs, they may incur marginal costs that cancel the benefits of further reductions in average costs, e.g., diminishing returns. The following tabulation represents an end-product for the decision-maker that exemplifies this situation:

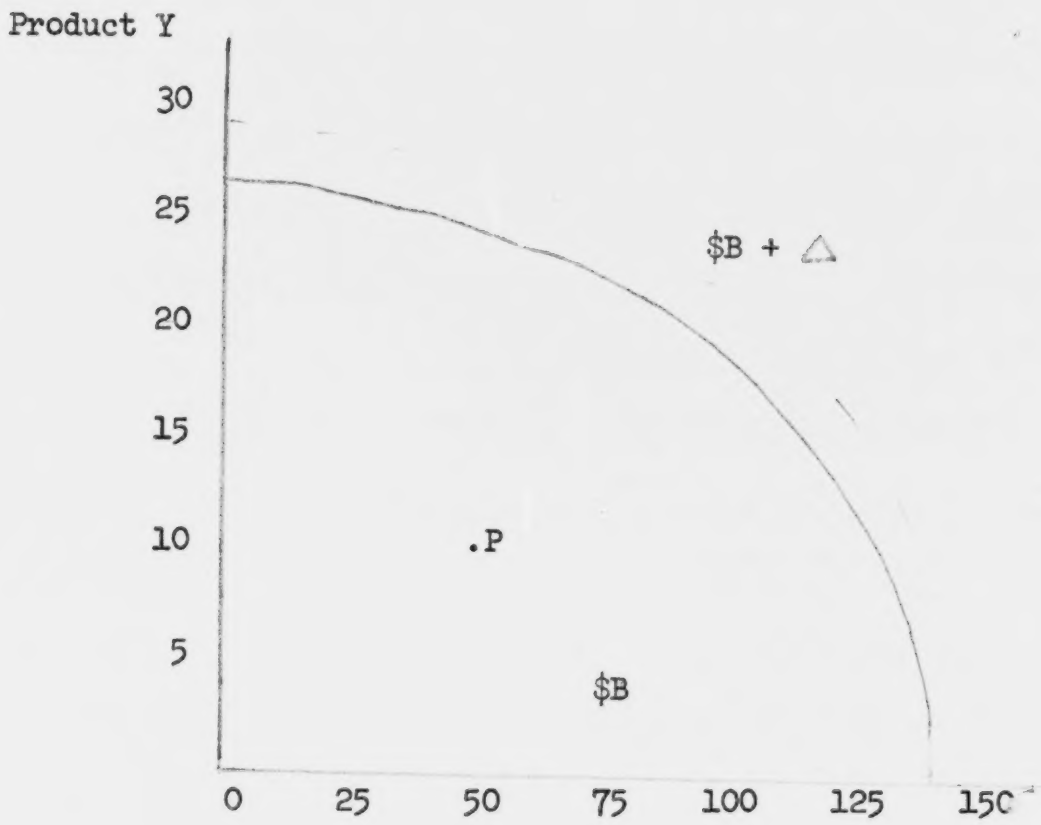
OUTPUT	FIXED COST	TOTAL COST	TOTAL VARIABLE COST	AVERAGE VARIABLE COST	AVERAGE FIXED COST	AVERAGE COST	MARGINAL COST
1	30	40	10	10	30	40	10
2	30	49	19	9.5	15	24.5	9
3	30	57	27	9	10	19	8
4	30	66	36	9	7.5	16.5	9
5	30	76	46 1/	9.2	6	15.2	10 1/
6	30	87	57	9.5	5	14.5	11
7	30	99	69	9.8	4.3	14.2	12
8	30	112	82	10.3	3.8	14.0	13
9	30	126	96	10.7	3.4	14.0	14
10	30	141	111	12.1	3.0	14.1	15
11	30	157	127	11.5	2.9	14.3	16
12	30	174	144	12	2.5	14.5	17

1/ The point hwere diminishing returns sets in as variable costs for additional units move upward.

5. Production analysis provides knowledge about the relationship between physical inputs and physical outputs, or the transformation of inputs into outputs, e.g., costs into products. The economic theory of production and marginal products is most relevant to this type of analysis. Because the efficient allocation of limited resources is a prime objective of PPBS, the economic choice of the decision-makers should be formulated with more explicit knowledge about the available alternatives, about what different combinations of things he can buy for those resources, and about the utility or worth of the outputs that might be derived or produced through various allocations of the inputs or resources. Through systematic quantitative analysis and diagramming, the application of production analysis can furnish the decision-maker with information to compare the relative efficiency of different possible decisions.

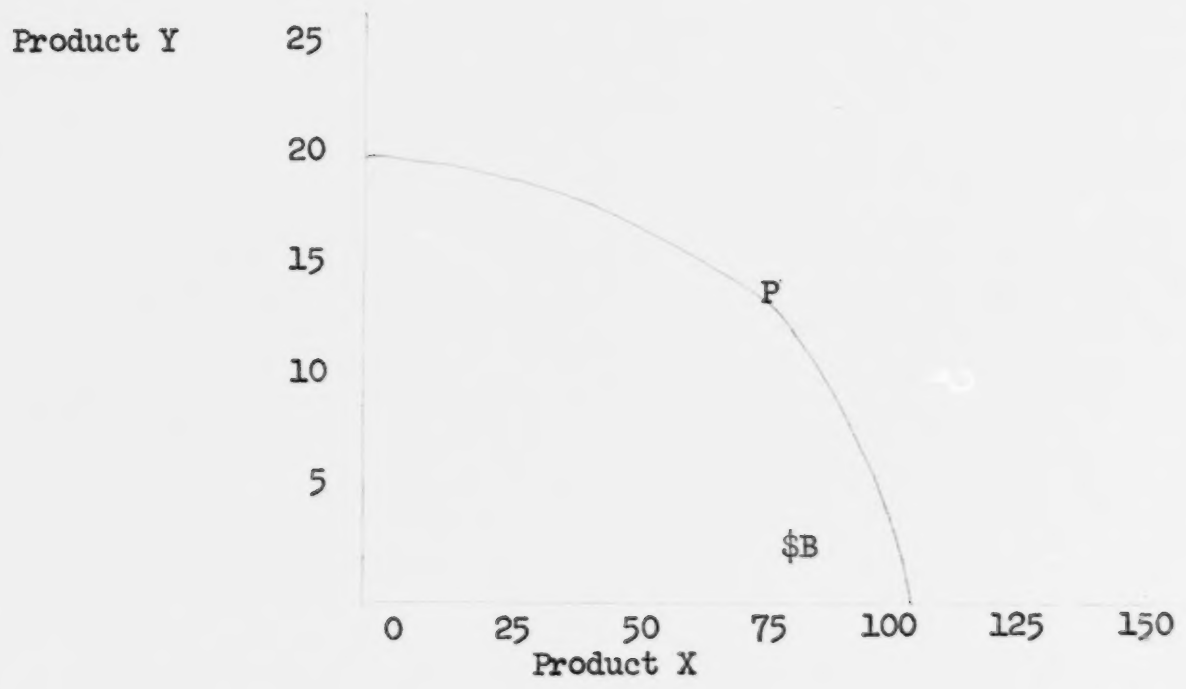
Here are some simplified illustrations of end-products of production analysis:

The production-possibility curve is useful to depict all possible maximum combinations of products that can be bought for a given input of dollars. The product combinations can range from apples vs. oranges, hospitals vs. schools, health vs. education, target destruction potential vs. defense kill potential, through "guns vs. butter." You can substitute any of these combinations for Product X and Product Y in the diagram below.

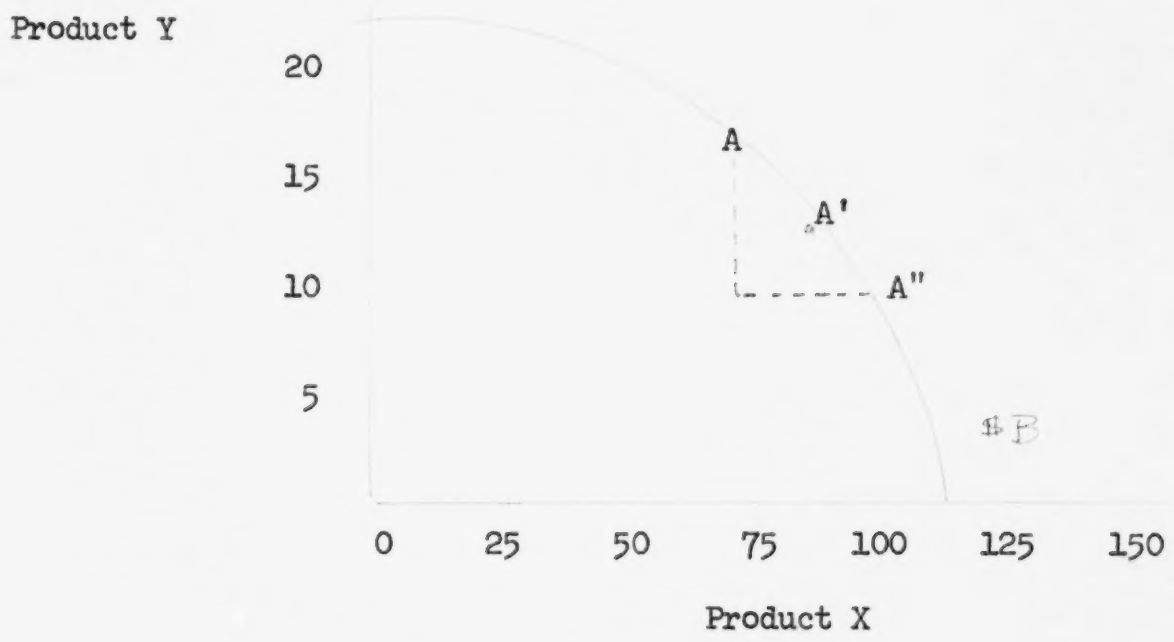


The continuous line shows the estimated quantitites of two products that could be bought for a given number of dollars. The dashed line shows the quantities that could be produced for a given larger number of dollars. To estimate the combination of three or more products that a given number of dollars would buy, this approach is also feasible but admittedly more difficult. With this information no matter if only crudely approximated, the decision-makers can tell that all of the points on the curve represent an efficient use of the given resources; that h ehas many choices; and that a choice of any point, like point P, under the curve is feasible but would represent an inefficient use of the given level of resources. But which of the infinite number of efficient points on the curve should be chosen?

6. Indifference curves provide a means for closing in on that efficient point that maximizes the utility of a particular combination of the two products. Indifference curves reflect preference for different combinations of useful products that could be bought for different amounts of resources. The curve depicts equal satisfaction for different combinations, such as more of Y and less of X, equal amounts of Y and X, and more of X and less of Y. Personal preference or judgment is a factor that is recognized as a vital part of PPBS, for which quantification and the application of complex techniques are no substitute. The indifference curve, representing personal taste and preference, can be most helpful as a basis for the decision-maker to make his choice. Several indifference curves to show combinations preferred for different levels of resources form an "indifference map" as illustrated below:



This is illustrated in the following diagram:



The application of these tools of applied economics is described in more detail in Hitch and McKean's "The Economics of Defense in the Nuclear Age."

Quantitative Reasoning

The translation of ideas and facts about a problem into symbols, diagrams and graphs, and numbers that represent them, involves the use of quantitative reasoning. By this means, it is possible to reduce such ideas and facts into manageable proportions, to measure or estimate their magnitude, to learn more about their interrelationships, and to answer significant questions bearing on how the problem might be resolved. Quantitative reasoning is naturally involved in the applied economics just described. But some additional quantitative approaches useful for application to PPBS problems, merit brief reference here:

1. Operations research (OR) is a principal means for quantifying complex problems and their possible solutions. OR applies a team of persons having relevant skill, for the rigorous analysis and treatment of inter-disciplinary problems. Many techniques are applied and innovated by OR teams to search for "optimum" solutions to problems. These include linear programming, queuing theory, gaming, mathematical modelling, and PERT. The application of an OR technique to a given problem may often be performed by just one person, but the formulation of a large complex problem, the identification and diagnosis of factors bearing on the problem, and the choice of techniques for rigorous analysis usually requires application of the combined talents of several people.

2. Statistical methods. Statistics is a discipline that deals with tools for characterizing aggregates of figures. Statistical methods provide means for managing, understanding, analyzing, and manipulating masses of numbers by estimating or summarizing their central tendency, their dispersion, range and variance, their trends and significance and their probabilistic implications. The application of statistical methods to PPBS problems provides a more comfortable and rational basis for decision-making and for overcoming decisions that may be based on erroneous, intuitive, or impulsive evaluation and judgment.

To evaluate the risk and uncertainty inherent in all planning, programming, and budgeting, estimates can be obtained through the application of statistical methods, especially those available to measure and estimate the probability of outcome. A variety of statistical methods or tools are available to estimate or predict the likelihood of achieving an uncertain

PPBS benchmark.

Statistical sampling is a means for estimating the scope, content, and characteristics of a large universe of numerical information on a given subject, e.g., population, retail prices for bread, labor earnings, etc. It is a means for saving time and money to obtain data representing information that would be too massive to cope with in totality. Sampling methods include techniques for achieving randomness, for stratifying the universe, and for estimating the sampling error.

Some statistical methods and techniques are particularly useful for evaluation and control of program performance. Regression analysis, for example is useful for controlling future performance on the basis of quantification and diagramatic illustration of past performance. Regression analysis provides a capacity to predict future performance and determine what deviations from the satisfactory level are permissible and what deviations indicate a loss of control and need for remedial action.

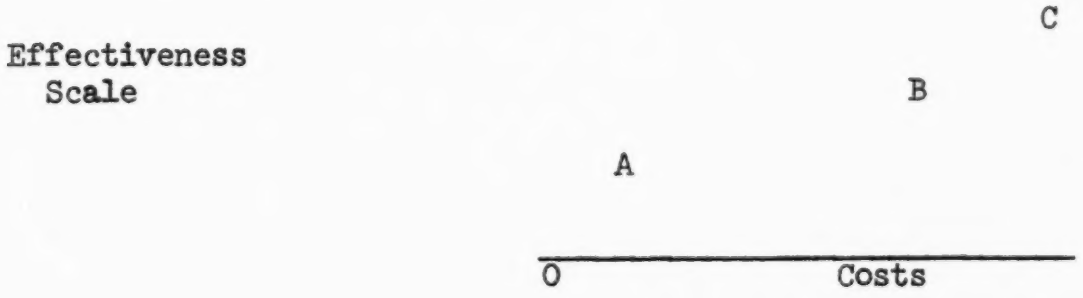
PERT (Program Evaluation and Review Technique) is, in effect, a statistical technique for management planning, programming, and control of the time, resources, and technology for achieving program objectives. PERT is a probabilistic technique that may be applied to estimate continuously the probability of program completion by any point in time.

3. Mathematical techniques include a wide range of tools for quantifying different aspects of PPBS analysis. Since mathematics is often called the science of quantity or quantities, the PPB analyst must take advantage of this science as a help for resolving many PPBS problems. As a means for symbolizing, relating, and manipulating the variables

bearing on program performance and evaluation, the laws and techniques of mathematics constitute a valuable resource for analysis. The building of a mathematical model of the problem is often useful to exemplify the problem and the impact of alternative solutions or decisions before any action is taken. Mathematical techniques are in some way involved in all of the "applied economics" and "quantitative reasoning" methods described above, as well as in the "cost-effectiveness analysis" described below. Useful cost-effectiveness analysis requires that alternatives be compared in terms of their differences in effectiveness dor the same costs (the comparison of outputs for an identical dollar input) or in terms of their differences in costs for the same effectiveness (the comparison of inputs for an identical output) -- or both types of camparisons.

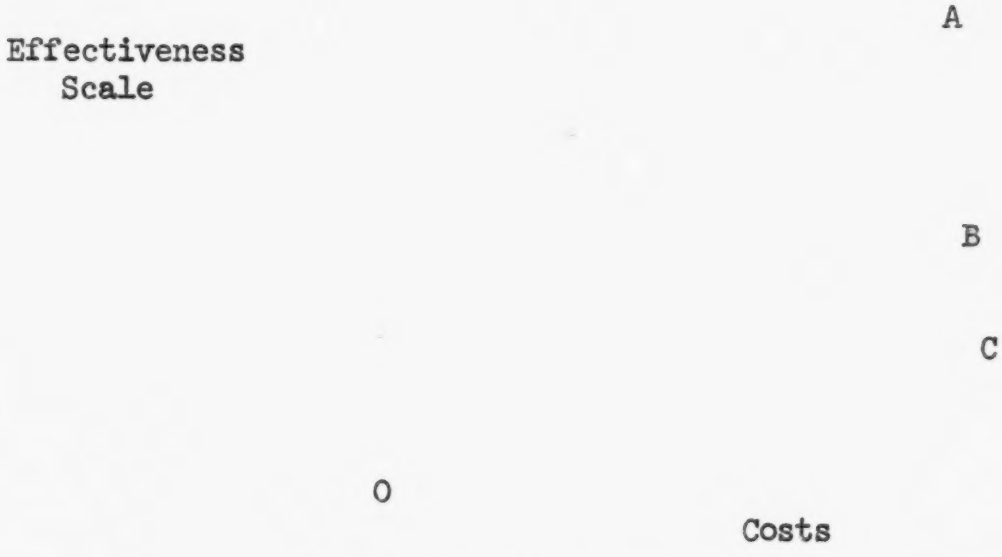
The diagramming of the results of cost-effectiveness analysis can be most helpful for decision-makers to visualize easily the potential impact of choices for decision. Moreover, a few summary numbers that approximate and compare the "cost-benefit ratios" that can be expected from alternative courses of action can go far to simplify the worth of those alternatives in the decision-maker's mind.

The simplified diagrams below illustrate the kinds of end products useful to the decision-maker, that can be obtained from cost-effectiveness analysis.



This diagram shows the effectiveness or output that may be bought through one program plan for different costs or inputs. It demonstrates at point A that very little effectiveness can be obtained for very little cost; that very great effectiveness at point C can be obtained for much lower costs than the slightly higher effectiveness at point C.

In most cases for which a cost-effectiveness curve can be drawn, the choice for decision should center in the knee of the curve.



In this case, curve A is the dominant alternative for choice. It is relatively easy to illustrate the results that are desired from cost-effectiveness analysis, but the production of reliable results includes some difficult tasks related to the development of appropriate and reasonable cost estimates as well as to the determination and scaling of effectiveness.

4. Quality Analysis. The quality of goods and services that constitute program outputs is an attribute that may be of primary significance for determining the costs or resource inputs for many programs. Quality analysis, therefore, must be recognized as an inherent factor in PPB

systems analysis. The PPBS emphasis on numbers and quantification does include the quantification of quality to the extent feasible.

Since quality is a characteristic that may be either material and tangible or immaterial and intangible, any conclusion that quality cannot be described or measured by numbers would be incorrect in many instances. For cases in which quality is a physical attribute, e.g., the decibels of sound put out by a warning system, the tonal quality of a radio, the length of performance for a space vehicle battery, the reliability of a bulldozer, etc., it can be estimated or measured through quantification.

Whenever quality forms a significant influence on effectiveness of output and a difference in resources may result in a significant change in quality, the effectiveness scale used for cost-effectiveness analysis should include the quality factor.

Less tangible quality attributes, such as the quality of social benefit, literature in publications, beautification, cultural advancement, paintings, etc. are more difficult to express numerically. But instead of concluding -- even for those cases where quality depends on individual personal tastes -- that "quality cannot be quantified", the door should be left open by raising the question, "How might we quantify the quality of output in this case?" (if it is a case for which an identifiable change in quality would create a significant change in effectiveness of output.).

Many organizations in Government and industry have techniques for estimating and measuring quality of output. Such mathematical and statistical techniques have resulted from many years of research, which continues today, to advance the state of the art of the quantification of quality.

The American Society for Quality Control is a major source of considerable literature on this subject.

Some Guiding Principles.

To gain many of the rewards promised by PPBS, there are many principles that should be followed to guide its effective development and operation. Most of these principles are derived from the practices employed and the experience gained by the Department of Defense since PPBS inception. Here, I will emphasize, simply and even bluntly, just a few of them -- those that I believe form the foundation for success.

1. Don't fight it, try it! The negative approach is used by those who spend time and energy finding reasons why it cannot or should not be done. This is called "fighting the problem" instead of "solving the problem."

2. The program structure should be developed without regard to organizational structure. Many programs cut across the organizational structure, making it foolhardy to assume that major organizational segments are synonymous with major program categories.

3. "Better be roughly right than exactly wrong" are the words of Mr. Systems Analysis.[1/] Precise answers can be derived from fine and fancy quantification techniques, but "there is great danger in this business to get mesmerized by the techniques"[1/] and end up with the perfect answer to the wrong problem.

4. The development and continuous operation of PPBS requires the approach of successive approximations, beginning with a first rough cut and followed by a series of refinements that will never be perfect, precise,

1/ Alain Enthoven, Assistant Secretary of Defense (Systems Analysis)

or optimal."[1] This principle merits close to first place in our thinking because it fosters getting started, no matter how rough and innacurate the original estimates may be. Once drafted, they do provide the basis for successive refinements and improvements.

5. The question to be answered by PPBS is "What is right?" not "Who is right?"[1] The decision-maker should have the answer to the former question even if his decision favors the answer to the latter question. That is his responsibility.

6. Systems analysis must be conducted with continuity. The findings from one-time analysis should not be set in concrete, thereby failing to keep abreast of changes and refinements that would modify the one-time analysis.

7. Cover the total problem by avoiding the omission of significant components of factors or ad hoc consideration of only parts of the problem. And contrariwise, ~~Similarly,~~ exclude factors that are irrelevant.

8. Identify explicitly the assumptions made and the uncertainties in store.

9. If initial results disagree greatly with the decision-maker's intuition, back to the drawing board!

10. Keep It Simple! "... the techniques we use are, generally speaking, the simplest." [1]

Parting Notes

After taking you through this complex maize of PPBS concept, I seek the words that may impart to you the final motivation and incentive to extend its application into library environments, and to make it an inherent

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[1] Alain Enthoven

part of your profession. The words that should do the job were written by Dr. Robert F. Munn, Acting Provost and Dean of the Graduate School, West Virginia University, in his article "The Bottomless Pit, or the Academic Library as Viewed from the Administration Building," College & Research Libraries, January 1968. Although his words are confined to the situation of academic librarians, I do believe they are equally applicable for librarians in all sectors except those engaged in profit-making library services.

"While many academic librarians worry endlessly about the Administration, they usually know very little about it. Librarians are not normally part of either the administrative inner circle itself or the select group of faculty oligarchs and entrepreneurs whose views carry great weight. They are thus excluded from the real decision-making process of the institution. Indeed, librarians are often horrified and/or enraged to discover that decisions of crucial importance to the library have been made without their advice or even prior knowledge."

"The most accurate answer to the question,'what do academic administrators think about the library,' is that they don't think very much about it at all."

"One important consideration is the fact that many academic administrators view the library as a bottomless pit. They have observed that increased appropriations one year invariably result in still larger requests the next. More important, there do not appear to be even any theoretical limits to the library's needs. Certainly the library profession has been unable to define them."

"Until fairly recently few academic administrators had even heard of such concepts as program budgeting, decision matrices, and cost-benefit analysis."

"Since nobody yet appears to have the slightest idea how to make a cost-benefit analysis of the contribution of the library, few administrators feel justified in straying far from the traditional percentage."

"The current pressure to introduce modern management practices into the universities will not leave libraries unaffected. Such techniques as program budgeting require a much more rigorous analysis of the balance of return against the investment than has ever been applied to libraries.

Just why should the library receive 3 or 6 or 1 or 10 percent of the institution's total budget? How should the claims of the library, the computer center, and educational television for budget support be evaluated? These and similar questions are certain to be asked. It might be prudent for academic librarians to have some answers.

Over the past decade, we have created a plethora of information systems and centers in the United States almost entirely unconnected with libraries, even though libraries have been information centers since long before the invention of computers and communication networks. I leave you now with these hopes:

-- That this presentation may help you to lift your sights for the greater effectiveness of the library community.

-- That it may help you to define more precisely what role the library should play in the plethora of information centers.

-- That you can visualize the potential utility of PPBS for libraries to participate more effectively in decisions affecting their contributions to their establishments.

-- That you will act to explore PPBS further (see the attached Reading References) and take steps toward PPBS training, development, and application as appropriate in your respective environments.

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